

Ficus lilliputiana (Moraceae), a new species from the Kimberley region of Western Australia and the Northern Territory

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Abstract

Dixon, D.J. *Ficus lilliputiana* (Moraceae); a new species from the Kimberley region of Western Australia and the Northern Territory. *Nuytsia* 13(3): 457–464 (2001). *Ficus lilliputiana* D.J. Dixon, a new species in subgenus *Urostigma* sect. *Malvanthera* Corner is described from the East Gardiner District of Western Australia and the Victoria River District of the Northern Territory. This lithophytic species is restricted to the sandstone escarpments around Kununurra and the Keep River National Park. *Ficus lilliputiana* is distinct, being the smallest taxon in the section and the only one to have a prostrate habit. Two forms are recognized, *F. lilliputiana* f. *lilliputiana* and *F. lilliputiana* f. *pilosa* D.J. Dixon, and are differentiated on the basis of the presence or absence of an indumentum. A key to the forms and notes on distribution, ecology, reproduction, conservation status and etymology are provided.

Introduction

The genus *Ficus* L., (Moraceae) has a pan-tropical distribution and is estimated to consist of approximately 750 species worldwide. Thirty-nine species are recorded for Australia in all mainland states except Victoria. The genus is divided into four subgenera, *Ficus*, *Urostigma* (Gasp.) Miq., *Pharmacosyceae* Miq., and *Sycomorus* (Gasp.) Miq., which are further subdivided into sections, subsections, series, and subseries (Corner 1959a, b, c, & d). The majority of Australian species occur in the *Ficus* subgen. *Ficus* and *Ficus* subgen. *Urostigma*. The taxa in the *Urostigma* sect. *Malvanthera* are currently being revised (Dixon 1999; Dixon in press; Dixon *et al.* in press) as the Flora treatment of Chew (1989) has proved unworkable.

The species in this section occur in Papua New Guinea and Australia. The Papua New Guinean and eastern Australian species, which are frequently encountered in complex rainforest, are hemi-epiphytic and commonly referred to as strangler figs. The remaining species are lithophytic and are usually associated with deciduous vine thickets on rocky outcrops in western Queensland, the Northern Territory, and Western Australia. One species, *F. brachypoda* (Miq.) Miq., extends into central Australia (Dixon, in review). Wheeler (1992) recorded a prostrate *Ficus* from the Kimberley region of Western Australia. She indicated that it was allied to *Ficus platypoda* (Miq.) A.Cunn. ex Miq. but its taxonomic status required further study. This prostrate fig is here described as a new species, *Ficus lilliputiana*.

Materials and methods

Twenty seven specimens from across the distributional range of *F. lilliputiana* were examined. Descriptions are based on material received on loan from the following Herbaria: AD, CANB, DNA, JCT, NSW, and PERTH. Many of the specimens received were sterile, and if reproductive organs were present they were usually few in number. Measurements of the vegetative and floral organs represent the mean of three organs and are accurate to ± 0.1 mm. Measurements of the vegetative organs were taken from dried material. The syconia were measured from spirited material preserved in 80% ethanol. The species has been seen in its natural habitat.

Taxonomy

Ficus lilliputiana D.J. Dixon, *sp. nov.*

Species affinis *Fico brachypodae* (Miq.) Miq. a quo distinguitur habito prostrato.

Typus: hills to the East of Hidden Valley Caravan Park, Kununurra, 15°46'S, 128°45'E, Western Australia, 18 October 1997, D.J. Dixon PHD423 & I. Champion (*holo*: PERTH; *iso*: BRI, DNA).

Diminutive lithophytic *shrub* to 45 cm high, spreading to 100 cm diam. *Twigs* glabrous or puberulous with ascending hyaline hairs, glabrescent. *Leaves* alternate. *Stipule* 10.0–23.5 mm long; glabrous or puberulous with ascending hyaline hairs, glabrescent. *Petiole* 2.5–16.0 mm long, 0.5–1.5 mm wide, glabrous or puberulous with ascending hyaline hairs. *Lamina* 8.0–66.6 mm long, 6.0–40.5 mm wide, obovate, ovate, oblong, elliptic or narrowly elliptic; base cordate, rounded or obtuse; apex rounded, obtuse or acute; abaxial surface glabrous, or puberulous to pilose with ascending hyaline hairs; adaxial surface glabrous or puberulous to pilose, often with ascending hyaline hairs concentrated around base, glabrescent. *Leaf venation*: basal veins indistinct, 33.0°–90.0°; lateral veins 17–46 pairs, 51.0°–78.0°. *Syconia* spheroid to obloid, 5.4–11.5 mm long, 5.3–13.0 mm diam., yellow, orange, red, purple or maroon, glabrous or minutely puberulous to puberulous with ascending hyaline hairs, glabrescent, sometimes punctate; ostiole triradiate. *Basal bracts* 3, imbricate, caducous or occasionally persistent, glabrous or puberulous to pilose, with ascending hyaline hairs. *Peduncle* 1.0–7.0 mm long, glabrous or puberulous with ascending hyaline hairs. *Interfloral bracts* present. *Female florets* embedded in wall of receptacle, sessile or pedicellate; tepals 3 or 4; stigma simple. *Male florets* interspersed with the female and gall florets, sessile or pedicellate; tepals 3 or 4; anther 1, dehiscence crescentic. *Gall florets* sessile or pedicellate; tepals 3 or 4.

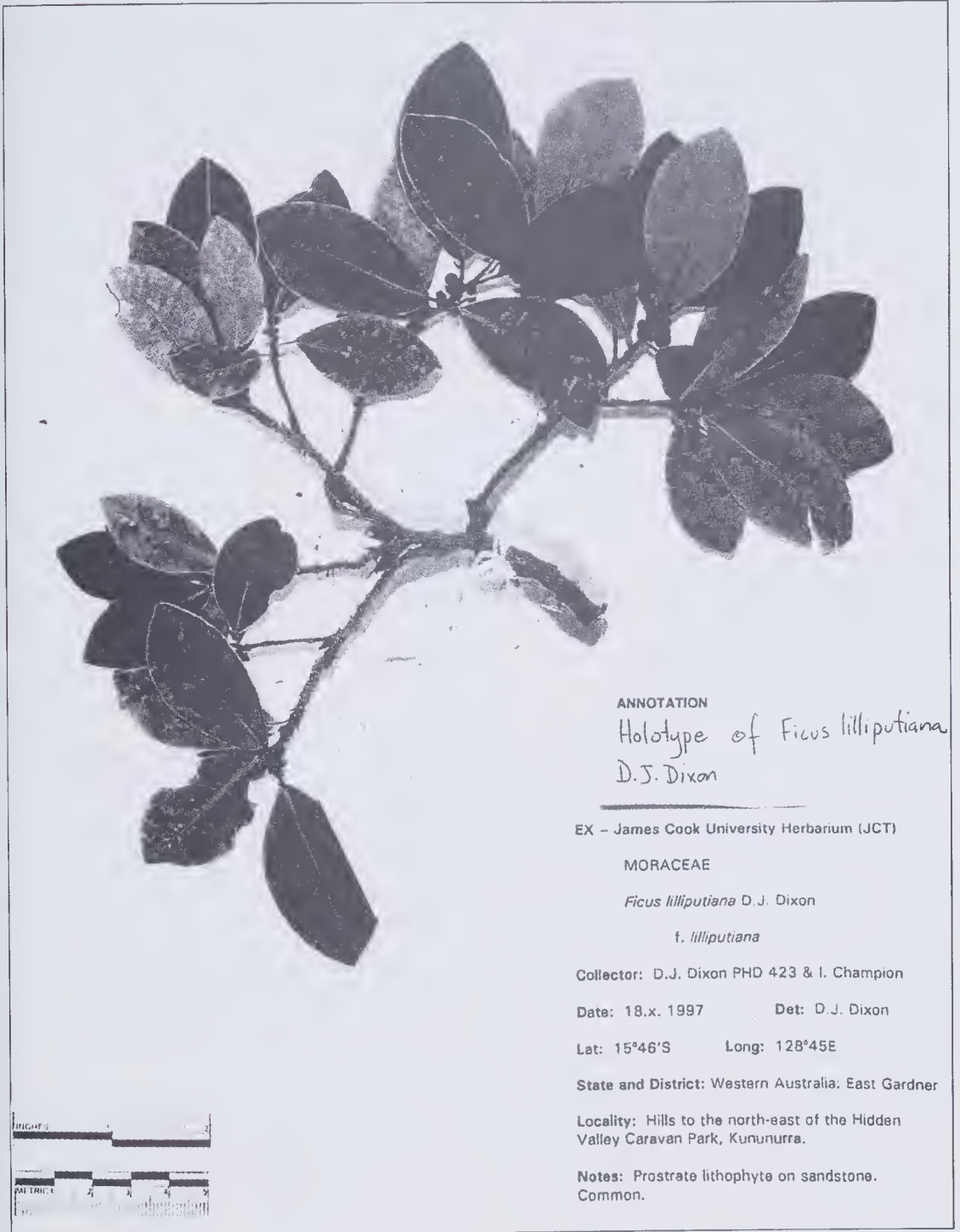
Note. There are two forms, which are distinguished as the key below.

Key to the forms of *Ficus lilliputiana*

- 1. Leaves and other parts glabrous a. f. *lilliputiana*
- 1. Leaves hairy, other parts variously hairy b. f. *pilosa*

a. *Ficus lilliputiana* D.J. Dixon f. *lilliputiana*

All parts glabrous. (Figure 1)



ANNOTATION

Holotype of *Ficus lilliputiana*
D.J. Dixon

EX - James Cook University Herbarium (JCT)

MORACEAE

Ficus lilliputiana D.J. Dixon

f. *lilliputiana*

Collector: D.J. Dixon PHD 423 & I. Champion

Date: 18.x. 1997 Det: D.J. Dixon

Lat: 15°46'S Long: 128°45E

State and District: Western Australia: East Gardner

Locality: Hills to the north-east of the Hidden Valley Caravan Park, Kununurra.

Notes: Prostrate lithophyte on sandstone.
Common.

Figure 1. The holotype of *Ficus lilliputiana*.

Specimens examined. WESTERN AUSTRALIA; EAST GARDNER DISTRICT: Hidden Valley, 3.2 km E of Kununurra, 15°43S, 128°48E, 1 July 1976, A.C. Beaglehole ACB54182 (PERTH); Hidden Valley National Park, Kununurra, 15°45S, 128°45E, 18 July 1988, D.F. Blaxell & J. Wrigley 88/057 (NSW); near Kimberley Research Station, Ord River, 12 Apr. 1958, N.T. Burbidge s.n. (AD); Lake Argyle off access road to Ord River Dam, 16°05S 128°45E, 23 Oct. 1997, D.J. Dixon PHD450 & I. Champion (JCT); hills to the E of Hidden Valley Caravan Park, Kununurra, 15°46S, 128°45E, 18 Oct. 1997, D.J. Dixon PHD420 & I. Champion (JCT); 14.7 km ESE of Kununurra off Victoria Highway, 15°49S, 128°51E, 23 Oct. 1997, D.J. Dixon PHD456 & I. Champion (JCT); Hidden Valley just E of Kununurra, 14°46S, 128°45E, 24 Apr. 1977, A.S. George 14539 (PERTH); Carlton Gorge on Ord River, 15°57S, 128°46E, 21 June 1995, K.F. Kenneally 11624 (PERTH); Hidden Valley, Kununurra, 15°43S, 128°48E, 31 May 1975, P. Ollerenshaw 1677 (CANB); Hidden Valley, near Kununurra, 15°46S, 128°44E, 18 Apr. 1987, R.W. Purdie 3300 (CANB); Hidden Valley, Kununurra, 15°45S, 128°46E, 15 June 1984, M. Rankin 2945 (DNA).
NORTHERN TERRITORY; VICTORIA RIVER DISTRICT: Keep River, 15°47S, 129°02E, 23 Sep. 1975, A.S. Mitchell s.n. (DNA).

b. *Ficus lilliputiana* f. *pilosa* D.J. Dixon, f. nov.

Formas, proxima affinis f. *lilliputianae*, sed ab ea semper differt a puberulis ad trichomata pilosa hyalina praesentibus in foliis.

Typus: hills off the road north-east of Hidden Valley Caravan Park, Kununurra, 15°43S 128°44E, Western Australia, 21 October 1997, D.J. Dixon PHD447 & I. Champion (*holo:* PERTH; *iso:* BRI, DNA).

Leaves with both surfaces of the lamina minutely puberulous to pilose with ascending hyaline hairs. (Figures 2, 3)

Specimens examined. WESTERN AUSTRALIA; EAST GARDNER DISTRICT: Martin's Gap, E of Ord River, 15°37S 128°52E, 14 Apr. 1956, N.T. Burbidge 5156 (CANB); Lake Argyle off access road to Ord River Dam, 16°05S, 128°45E, 23 Oct. 1997, D.J. Dixon PHD449 & I. Champion (JCT); hills to the E of Hidden Valley Caravan Park, Kununurra, 15°46S, 128°45E, 18 Oct. 1997, D.J. Dixon PHD421 & I. Champion (JCT); Hidden Valley, 3.3 km E of Kununurra, 15°47S, 128°46E, 9 Aug. 1981, K.F. Kenneally 7690 (PERTH); Kelly's Knob, Mirima (Hidden Valley) National Park near Kununurra, NE Kimberley, 23 June 1989, K.F. Kenneally 10939 (PERTH); 8 km N of Kununurra, 15°47S, 128°44E, 1 Oct. 1979, Petheram 477 (DNA); Hidden Valley, 15°46S, 128°45E, 22 Aug. 1988, K. Hill 935 (NSW).
NORTHERN TERRITORY; VICTORIA RIVER DISTRICT: Gurrandalng Walk, 10 km N of Cockatoo Lagoon, Keep River National Park, 15°53S, 129°03E, 26 June 1984, K.F. Kenneally s.n. (PERTH).

Distribution and ecology. Both forms of *F. lilliputiana* have a limited and totally sympatric distribution (Figure 4). The species is restricted to the sandstone escarpments of the north-eastern Kimberley region of Western Australia and the adjacent Keep River National Park of the Northern Territory. *Ficus lilliputiana* is a lithophyte found growing only in rock crevices (Figure 3). In some cases both forms of this species occur next to one another in the same rock crevice and have been collected and presented as the same herbarium specimen. The PERTH specimen, Kenneally 11624, collected from Carlton Gorge on the Ord River is a mixture of both forms.

Flowering period. Fertile plants have been collected from April to October. However, as further material is collected I expect that reproduction will prove to be continuous throughout the year to support the reproduction of the pollinator wasp.

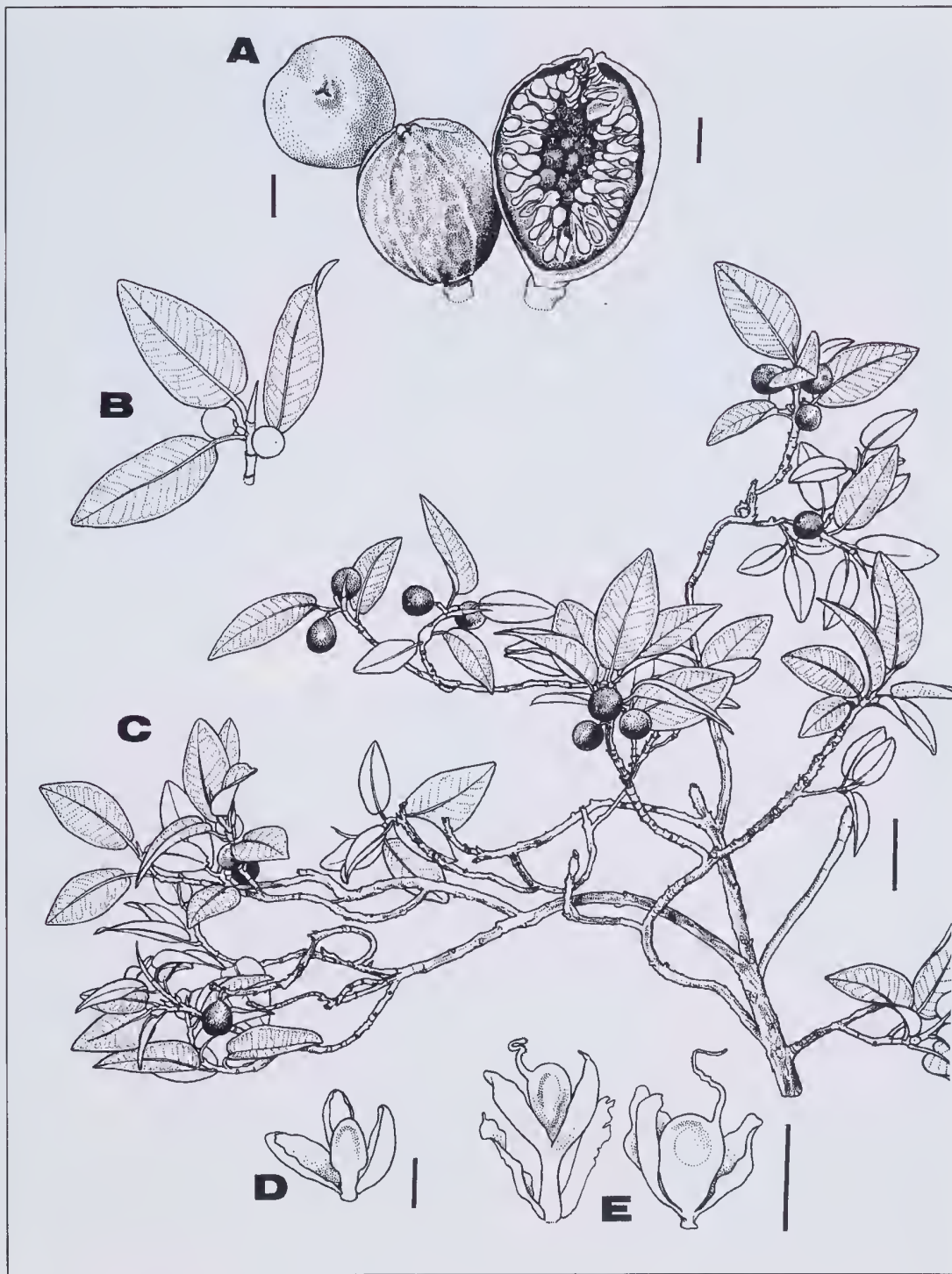


Figure 2. *Ficus lilliputiana* f. *pilosa*. A - sycones (scale bar 2 mm); B - twig with axillary sycones; C - branch (scale bar 20 mm); D - male floret (scale bar 1 mm); E - female florets (scale bar 1 mm). Drawn by Margaret Menadue from K.F. Kenneally 7690 (PERTH).



Figure 3. Habit of *Ficus lilliputiana* f. *pilosa*. A - on sandstone escarpments of Hidden Valley, east of Kununurra; B - close up of leaves and syconia. Photographs by Kevin Kenneally.

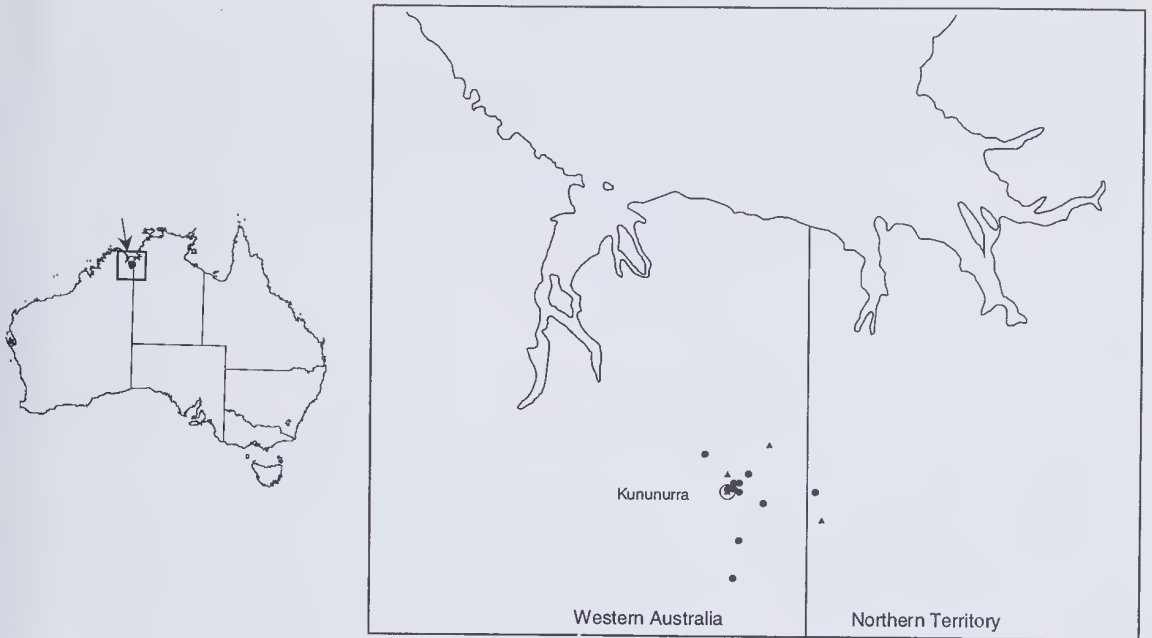


Figure 4. The distribution of *Ficus lilliputiana* f. *lilliputiana* ● and *Ficus lilliputiana* f. *pilosa* ▲ based on available collection data.

Pollination. The pollinator wasp of *Ficus lilliputiana* is *Pleistodontes proximus* Wiebes. *Pleistodontes proximus* was originally described by Wiebes (1990) from wasps recovered from the *Kenneally* 7690 specimen held at PERTH which had been determined as *F. platypoda*, but which is in fact *F. lilliputiana*.

Conservation status. Both forms are found in national parks in Western Australia (Mirrima), and the Northern Territory (Keep River), however, because of the horticultural appeal of this species, a conservation code of 2RCa is appropriate (Briggs & Leigh 1996). CALM Conservation Codes for Western Australian Flora: Priority Four.

Etymology. The specific epithet – *lilliputiana* alludes to the small growth habit of this species. All other species in subgenus *Urostigma* sect. *Malvanthera*, are erect shrubs or large trees. Stearn (1993) refers to other plant taxa with this epithet as being small enough to inhabit the land of Lilliput in Swift's "Gulliver's Travels". To the Lilliputians, a race of people no taller than six inches (Swift 1726), this fig would have truly been a magnificent banyan. Therefore, I consider *F. lilliputiana* to be a worthy addition to the flora of Lilliput.

The form epithet of *F. lilliputiana* f. *pilosa* is derived from the Latin term – *pilosus*, and refers to the hairs present on both surfaces of the leaves.

Notes. This species is easily recognized in the field as it is the only prostrate species occurring in the subgenus *Urostigma* sect. *Malvanthera*. If collected without reference to its habit, *F. lilliputiana* f. *pilosa* may be confused with *F. brachypoda*. However, it can be distinguished from this species by the absence of ferruginous hairs. *Ficus lilliputiana* has immense horticultural appeal because of its prostrate habit. Lilliput's Fig would be an apt vernacular for this species.

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